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WILDLIFE CONSIDERATIONS IN THE GROWTH MANAGEMENT ACT

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The Department of Wildlife's mandate to "preserve, protect, and perpetuate wildlife and wildlife habitat" has focused primarily on the agency's authority to regulate activities directly associated with animals. This has included rules regarding the taking, retention, transfer, and disposition of wildlife as set forth in WAC's and RCW's for the State of Washington. The agency's authority to regulate activities affecting the land base (habitat) is limited. WDW has regulatory authority only pertaining to bald eagles and work within the high water mark of streams. The agency's primary role in protecting wildlife is that of being an advisor to city and county governments, Department of Natural Resources, and U.S. Forest Service in land use planning, reviewing development proposals, and timber harvest planning.

At the local level, WDW's advisory role in protecting wildlife habitat owned by private citizens is set forth in the State Environmental Policy Act (SEPA) and the Shoreline Management Act. Through these legislative acts, WDW may provide comments on the accuracy of environmental documents and offer recommendations to reduce the impacts of development on wildlife habitat. It is up to the city or county government to incorporate these comments and recommendations in their permits, and WDW's counsel may be modified or rejected by the local government.

This has presented a very difficult situation for the Department of Wildlife. It is axiomatic, at least among biologists, that wildlife management is based on habitat management. Any program to "preserve, protect, and perpetuate" wildlife must be focused on preservation and protection of habitat, but this is largely outside of WDW's statutory authority.

In 1990, new state legislation was adopted requiring local governments to address land use concerns beyond the scope of SEPA established nearly two decades ago. This legislation, the Growth Management Act (GMA), requires Washington counties and cities to take a comprehensive, coordinated, proactive approach to land use planning that will guide land development in their jurisdictions into the next century. This approach to land use planning departs considerably from the case-by-case methodology of SEPA.

The GMA requires cities and counties across the state to address land use issues that directly and indirectly impact wildlife habitat. Because 55% of the land base in Washington State is privately owned, the decisions made by local governments regarding land use planning and development significantly affect WDW's mandate to protect wildlife. For that reason, the GMA is among the most significant pieces of legislation affecting wildlife in Washington since the inception of the Game Department in 1933.

The GMA does not change the regulatory authority of the Department of Wildlife. It does reaffirm the central role of local governments through a "bottom-up" approach to land use planning. Therefore, a goal of WDW is to encourage and assist local governments to adopt policies and regulations that will support the agency's mandate to protect wildlife resources and preserve our state's rich wildlife heritage across a changing landscape.

WDW'S response to the GMA

For too long wildlife concerns have been given secondary status and considered as an afterthought in land use planning. The reactive mode of addressing wildlife only after preliminary development plans have been prepared is less effective protection than what might occur if wildlife were made a more integral component of the entire planning process. The GMA is now providing the incentive for counties and cities to re-assess their current policies regarding wildlife habitat. The GMA will assist local jurisdictions in creating new tools and adopting new programs to more effectively incorporate wildlife concerns into the development of comprehensive plans and protective regulations.

County plans that effectively protect fish and wildlife habitat conservation areas will have immediate benefits regarding two serious shortcomings in our current system of environmental review. First, the problem of cumulative impacts will be more effectively addressed. This has been cited by planners as being the most serious problem regarding wildlife and land use planning across the state. Conducting a comprehensive review of the entire landscape prior to development plans, as provided for in the GMA, will lessen the cumulative impacts inherent in SEPA's site-by-site review procedure.

Second, wildlife do not respect political boundaries that exist only as lines on a map. Proper planning for wildlife should be based on natural features of the landscape that, at a minimum, include an entire drainage system. The GMA requires interjurisdictional cooperation in the development of planning policies to ensure consistency across political boundaries. This will help planning policies to be consistent throughout an animal's home range. It will also help reduce fragmentation of important habitats and maintain linkages within a habitat network.

The Priority Habitats and Species Program

Overview

WDW's primary goal in working with local jurisdictions complying with the GMA is to encourage the incorporation of the data and management recommendations developed through our Priority Habitats and Species (PHS) Program into each county's and city's planning process.

The Priority Habitats and Species Program began in late 1989 as an agency program independent of the GMA. The program's possible application to the GMA began to evolve in 1991. The purposes of the program are to: define, identify, and map the locations of important wildlife habitats and species using specific criteria; and to develop management recommendations for those habitats and species.

The first phase of the program mapped priority species and habitat types on 11 million acres of state and private commercial forest land in 1990. WDW biologists, agents, program managers, and others pooled their expertise and personal experience to complete 650 maps (1:24,000 scale) with information on 10 unique habitats, 38 nongame species, 14 game species, and 10 game and nongame fish species. The GIS-based maps and accompanying tabular data are maintained in an ARC INFO computer system. Additionally, management recommendations for the priority species and habitat types were developed.

The second phase of the program mapped priority species and habitat types in urbanizing areas across the state. Additional priority species and habitat types, distinct from those in forest lands, were included in the mapping. Management recommendations for the urban priority species and habitat types are being developed.

The third phase of the PHS program involves priority species and habitat types in coastal areas that may be vulnerable to oil spills and in shrub-steppe areas of eastern Washington. Mapping of these areas has been completed and management recommendations will be completed in 1993. Mapping of federal forest lands is being planned.

The PHS program is guided by a WDW Core Team and a Technical Advisory committee (TAC) composed of representatives from tribes, small and large forest landowners, environmentalists, state resource agencies, counties, cities, U.S. Forest Service, U.S. Fish & Wildlife Service, Center for Streamside Studies, builders, developers, and realtors. The Core Team and TAC meet regularly in Olympia.

The PHS program establishes activity priorities within WDW and also assists landowners and managers in identifying wildlife issues at the planning stages. PHS data are currently being used: to guide forest practices; to prepare the State Hydro Plan; by counties and cities to designate critical areas for the Growth Management Act; by WDW biologists to prepare management plans; and to review environmental impact statements.

The PHS species list

The Department of Wildlife's PHS program defines "priority species" as wildlife species of concern due to their population status and their sensitivity to habitat alteration. WDW biologists see these species as the most vulnerable to population declines and possible extirpation in the face of land clearing, road construction, residential and commercial development, and other land use changes.

The PHS species list was derived from computer-based wildlife information that has been compiled from across the state over the last 20 years, as well as from the collective, professional opinions of more than 300 WDW wildlife biologists, agents, and program managers.

Criteria

Three criteria were used when considering the inclusion of a species on the PHS list. The criteria, ranked in importance, are:

1. LISTED SPECIES. State of federal listed and candidate species for endangered, threatened, and sensitive classification. These are species known to be experiencing or have experienced failing or declining populations due to factors such as limited numbers, disease, predation, exploitation, or loss of suitable habitat. These species are thought to be in jeopardy of extirpation or extinction because of population declines.

2. VULNERABLE SPECIES. Species that are vulnerable to severe population declines because they are uncommon (either within a specific physiographic province or statewide) or have a very limited distribution. Their uncommon nature and limited distribution makes them particularly vulnerable to catastrophic population declines because of disease, extreme weather, or loss of suitable habitat. This may include habitat obligate species whose primary habitat is undergoing rapid loss or alteration. Also includes those Monitor species that are classed Monitor because of their rarity, vulnerability, or habitat needs. This may include some game species.

3. RECREATIONALLY VALUABLE SPECIES. Native and introduced species with high recreational value (consumptive or nonconsumptive) or high public profile. These species contribute significantly to local economies or provide unique or rare opportunities, and they are vulnerable to habitat loss or degradation. These species are considered Priority because WDW is mandated by law to provide wildlife-oriented recreational opportunities to the public.

Relationship to other lists

The PHS list of species is one of several wildlife "lists" or categories developed and maintained by WDW. The Department has statutory authority to list wildlife species as "endangered", "threatened", or "sensitive":

1. Endangered species are wildlife species native to the state of Washington that are seriously threatened with extinction throughout all or a significant portion of their range within the state. Endangered species are legally designated in WAC 232-12-014.

2. Threatened species are wildlife species native to the state of Washington that are likely to become an endangered species within the foreseeable future throughout a significant portion of their range within the state without cooperative management or removal of threats. Threatened species are legally designated in WAC 232-12-011.

3. Sensitive species are wildlife species native to the state of Washington that are vulnerable or declining and are likely to become endangered or threatened in a significant portion of their range within the state without cooperative management or removal of threats. Sensitive species are legally designated in WAC 232-12-011. Currently, no species have yet been assigned to this category.

WDW has prepared a list of "candidate" species that will be reviewed for possible listing as endangered, threatened, or sensitive species. Candidate species are designated in Wildlife Policy 4802.

Beyond these four categories, WDW has recognized an additional category of wildlife referred to as "monitor" species. Monitor species, designated in Wildlife Policy 4803, are wildlife species native to Washington that are of special interest because of special aspects of their natural history (e.g., were formerly endangered/threatened, require habitat of limited availability, are indicators of environmental quality, etc.).

Two additional categories of wildlife that have been designated through statutory authority by WDW are "game" and "nongame". Game species are wildlife species that may be hunted, fished, and/or trapped as authorized by the Wildlife Commission. Nongame species are, for the most part, wildlife species not included in any of the above categories; these include protected (may not be hunted or fished) and non-protected (unclassified) wildlife.

The current list of PHS species is a subset of endangered, threatened, sensitive, candidate, monitor, game, and nongame species, as depicted in figure 1. When all phases of the PHS program have been completed, we expect the PHS list to contain all of the endangered, threatened, and sensitive species in the state, as well as most of the candidate and many of the monitor species. Some additional game and nongame species may also be added to the PHS list.

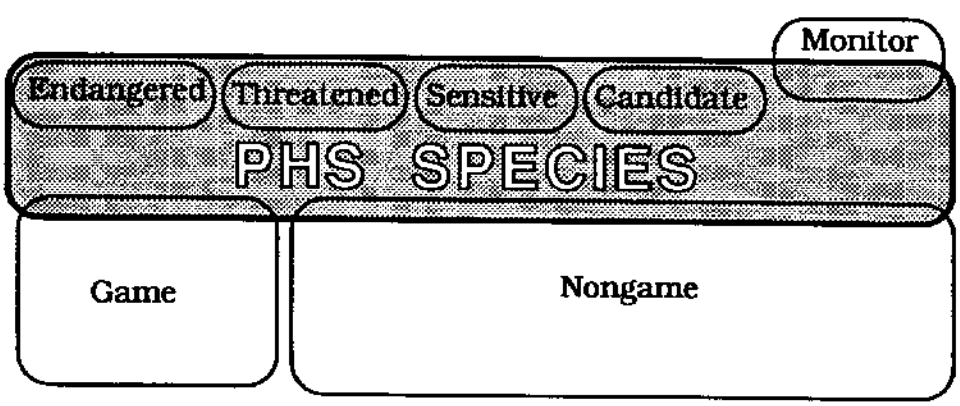

Figure 1. Relationship of PHS to other wildlife categories.

PHS list summary

Of the approximately 640 vertebrate and innumerable invertebrate species found in Washington State, there are currently 113 vertebrate and 16 invertebrate species on the PHS list. In addition, there are 7 groups of species (cavity-nesting ducks, seabird concentrations, shorebird concentrations, etc.). The taxonomic and status breakdowns of the PHS species list are:

Fish	16	Endangered	13
Amphibians	4	Threatened	5
Reptiles	3	Sensitive	0
Birds	55	Candidate	51
Mammals	35	Monitor	21
Invertebrates	18	Game/Nongame	41
Total	131	Total	131

It is important to note that many PHS species are very local in distribution, so that only a portion of these species will be found in any given county. For example, Beller's ground beetles only occur in a few sites in King County, Columbian white-tailed deer only occur in isolated locations in Wahkiakum County, and the golden hairstreak butterfly in Washington is limited to a single grove of trees in southern Skamania County. The number of PHS species likely to be found in a given city or town is only a small fraction of the total PHS species.

Getting beyond endangered and threatened

In response to the GMA's requirement to classify, designate, and regulate fish and wildlife habitat conservation areas, some cities and counties may consider protection only for species classified as "endangered" or "threatened" by WDW. Restricting planning activities to only endangered and threatened species would, in WDW's view, inadequately address wildlife issues in this state by omitting important categories of Washington wildlife. It would also appear contrary to the principles and best practices of the art and science of land use planning. Endangered and threatened species represent mistakes that have already happened, poor judgements that have already been made, or lack of adequate consideration in land use changes that have already occurred. A single focus on just these two categories of wildlife is a reactive mode of planning that only addresses ways to mend past neglect and mismanagement. The true spirit of land use planning anticipates potential conflicts and responds to these in a proactive manner before they become real problems. Therefore, effective planning for wildlife must include consideration of those species that are currently being pushed in the direction of endangered or threatened status. This can be done by including PHS species that are now classified as sensitive, candidate, monitor, or game/nongame as priority species in the local jurisdiction's responses to the GMA.

PHS Species Management Recommendations

Wildlife management includes specific activities and programs designed to preserve, protect, and perpetuate animal species throughout their natural range. Contrary to popular notions, these activities and programs rarely involve direct contact with wildlife through captive breeding, translocation, veterinary care, artificial feeding, or other one-on-one contact with individual animals. Instead, wildlife management is accomplished indirectly through activities focusing on the animals' habitat. By manipulating components of habitat, thereby increasing the habitat's suitability, productivity, or carrying capacity, wildlife populations are increased, decreased, or held steady in accordance with management goals. Wildlife management is habitat management.

Many of the important components of habitat for most wildlife species are associated with vegetation. Various animal species respond differently to successional stage, amount of canopy closure, vegetation height, vegetation diversity, the presence of snags and decaying

logs, and other physical characteristics of the plant community. Additional habitat components that affect the distribution of animal species include the temperature and velocity of streams, soil composition, seasonal temperature ranges, humidity, and other abiotic features of the environment.

Many wildlife species in Washington are adapted to particular features of a forested environment. For example, spotted owls have a minimum requirement of several thousand acres of old growth forest in order to survive, while band-tailed pigeons require berry and seed-producing plants in close proximity to mineral springs across a variety of forested successional stages. Wildlife populations are affected by forest managers making decisions regarding harvest methods (e.g., clearcut versus selective cutting), size of clearcuts, interspersion of clearcuts, interconnecting corridors between late seral patches, buffers along streams and around wetlands, retention of snags, application of herbicides, and other land use actions.

A parallel can be drawn between forest managers and city/county planners. Any action that results in changes to the landscape will have corresponding effects on the wildlife in that area. Land use planners are, by default, habitat managers, even if wildlife considerations are not consciously included in the planning process. Examples of issues that may be addressed by city/county planners that affect wildlife include proposals to fill wetlands for building sites, buffers along residential streams, directing stormwater runoff, retention of greenbelts as urban separators, zoning, siting of roadways and industrial areas, development of parks for passive recreation, and other similar concerns.

The needs of wildlife are best met if they are included proactively as an integral component of the entire land use planning process. Habitat management is not a new or esoteric science. The activities associated with habitat management are within the realm of planning activities practiced by city/county land use planners. The PHS management recommendations developed for *state/private forested areas* can be summarized in 8 primary practices and 13 secondary or supporting practices. While some of these are principally the concern of forest managers, most can and should be utilized by city/county land use planners as well.

Primary PHS management practices (as developed for state/private forest lands)

1. Permanent protected area: an area around the nest site (or roost site for eagles) of the PHS species. No permanent land use change should be allowed within the protected area. This is the primary management practice for six PHS species, and is often used in conjunction with the secondary management practices of limiting human disturbance (see Table 1).

2. Conditioned area: establish a buffer around the habitat or important habitat component of the PHS species, within which land use changes are restricted or conditioned. This is the primary management practice for five PHS species, and for these species it is often used in conjunction with the secondary management practice of limiting chemical applications.

3. Natural habitat: maintain a natural habitat providing a suitable combination of food, water, and shelter relatively free of human disturbance. This is the primary management practice that is most often applied to large, wide-ranging animals outside typical urbanizing areas, and therefore it has limited use by city/county planners for PHS species.

4. Selective logging: minimize clearcuts and/or include special harvest considerations. This is the primary management practice for nine PHS species, all of which are not typically associated with urban or urbanizing areas; therefore, this technique is of greater use to forest planners than to city/county planners. It is often used in

conjunction with the secondary management practice of limiting human disturbance and timing restrictions.

5. Maintain a particular successional stage (e.g., old growth forest or grass meadow), plant community (e.g., oak forest), or plant species (e.g., golden chinquapin for golden hairstreak butterfly). This is the primary management practice for seven PHS species.

6. Create and/or maintain snags. Cavity-nesting birds have this as their primary management practice, including seven PHS species/groups. This technique is often used in conjunction with special timber harvest considerations and the restriction of chemicals (especially aerial insecticides).

7. Maintain the structural integrity of wetlands. Three PHS species have this as their primary management technique.

8. Maintain the structural integrity of riparian areas. Twelve PHS species have this as their primary management practice, attesting to the importance of riparian areas to wildlife. Other important management practices for riparian areas are the retention of buffers, controlling in-stream structures, and restricting adjacent roads.

Secondary PHS management practices

9. Control human disturbance and/or apply timing restrictions to accommodate seasonal variations in species' sensitivities to disturbance; indicated for 19 PHS species.

10. Retain downed logs/stumps, which are critical for foraging, basking, or den sites; indicated for 6 PHS species.

11. Allow natural regeneration of logged/burned areas so that a shrub seral stage can develop; indicated for 1 PHS species.

12. Maintain water flow and quality; control stormwater runoff. Indicated for 7 species.

13. Control in-stream structures, such as bridges, piers, boat ramps, or culverts which impede the animal's natural movements; indicated for 7 PHS species (all fish).

14. Reduce the amount of roadway and/or restrict their placement; indicated for 18 PHS species, primarily wide-ranging forest species or species utilizing riparian areas.

15. Minimize chemical applications, including insecticides, herbicides, rodenticides, and piscicides, which may kill an animal directly through toxic exposure or indirectly by eliminating its food resource; indicated for 25 PHS species.

16. Control non-native and/or introduced animals which may act as competitors or predators; indicated for 8 PHS species.

17. Control scientific collecting; indicated for 2 PHS species, both of which are salamanders.

18. Control cattle and sheep access and grazing, as these animals compete for browse and/or trample wildlife habitat; indicated for 10 PHS species.

19. Minimize wire fences to allow free movement of animals; indicated for 2 PHS species.

20. Modify powerlines to prevent electrocution; indicated for 1 PHS species.

21. Provide artificial nest sites or nest boxes; indicated for 5 PHS species.

Table 1. Wildlife management practices for PHS species in forested areas. Species are grouped according to their primary management practice (boldface and underlined); important supplemental practices are underlined. Numbers correspond to numbered management practices in text.

SPECIES	MANAGEMENT PRACTICES
Protected area	
bald eagle nest	**1** 2 4 9 15
bald eagle roost	**1** 2 9
common loon	**1** 9 21
great blue heron	**1** 2 7 9
marbled murrelet	**1** 2 5 9
osprey	**1** 2 4 6 9 14 15
Townsend's bat	**1** 2 9 15
Conditioned areas	
band-tailed pigeon	**2** 5 15
Beller's ground beetle	**2** 12 15 16
Hatch's click beetle	**2** 12 15 16
Larch mt. salamander	**2** 4 9 17
long-horned leaf beetle	**2** 12 15 16
Wildlife range	
bighorn sheep	**3** 5 9 15 16
black-tailed deer	**3** 5 14
Col. white-tailed deer	**3** 4 8 18
golden eagle	1 2 **3** 4 9 15 20
mountain caribou	**3** 4 5 14
pygmy shrew	**3** 15
Selective logging	
blue grouse	**4** 5 16 18
elk	**4** 5 9 14
lynx	**4** 5 9 18
Merriam's turkey	**4** 9 18
moose	**4** 5
mountain goat	**4** 5 9 18
Rocky mt. mule deer	**4** 5 9 14
white-headed woodpecker	**4** 6 15
white-tailed deer	**4** 5 9 14
Seral stage: plant community	
fisher	4 **5** 6 10
marten	2 4 **5** 6 10 14
Vaux's swift	**5** 6
golden hairstreak b-fly	2 4 **5** 15
Oregon silverspot b-fly	4 **5** 15
pocket gopher	2 **5** 15
western gray squirrel	2 **5** 14 18 21
Snags/(pilings)	
black-backed woodpecker	2 5 **6** 15
cavity-nesting ducks	**4** 6 7 21
flammulated owl	**4** 5 **6** 15
Lewis' woodpecker	**4** 5 **6** 11 15
pileated woodpecker	**4** 6 10 15
purple martin	**6** 15 21
western bluebird	5 **6** 21

Maintain wetlands																
sandhill crane	2		5	7		9		12		14				18	19	
spotted frog				7	8	9		12			15	16				
western pond turtle	2			7			10			14	15	16		18	19	
Maintain riparian areas																
cutthroat	2				8				13	14	15					
Dolly Varden	2				8				13	14						
Dunn's salamander	2		4		8		10									
harlequin	2	3			8	9		12		14						
kokanee	2				8				13	14						
mountain sucker	2				8				13	14						
mountain whitefish	2				8				13	14						
Olympic mudminnow			4	7	8			12			15	16		18		
pygmy whitefish	2				8				13	14						
trout/steelhead	2				8	9			13	14	15					
Van Dyke's salamander	2		4		8		10						17			
yellow-billed cuckoo				7	8						15			18		

PHS habitats

Several priority habitat types have been identified in the first two phases (state/private forests, urbanizing areas) of the PHS program (Table 2). Additional priority habitat types will be added when the coastal and shrub-steppe phases of the PHS program are completed. Management recommendations will be prepared for each habitat type.

Table 2. Priority habitats under PHS.

Aspen stands	Criteria:	> 2 acres; primarily in eastern Washington.
	Justification:	Limited distribution; association with water; vulnerable to disturbance (esp. grazing); high species diversity.
Caves	Criteria:	> one foot diameter and > three feet deep.
	Justification:	Limited distribution; vulnerable to human disturbance; dependent species (bats, colonial nesting/roosting birds, large mammals).
Cliffs	Criteria:	> 25 feet high & < 5000 feet.
	Justification:	Limited distribution; unique species assemblage (raptors, colonial seabirds); difficult to mitigate or artificially create.
Islands	Criteria:	No size limit.
	Justification:	Limited distribution; unique nesting habitat for colonial birds and waterfowl; vulnerable to human disturbance (recreational boating, camping, fishing, etc.).
Meadows	Criteria:	Natural climax seral stage.
	Justification:	Contribution to habitat diversity; vulnerable to disturbance (grazing, ORV use, road construction); seasonal use by game mammals and other wildlife.
Oak Woodlands	Criteria:	20-50% oak in a mixed oak-conifer stand or a pure stand with adjacent conifers; should contain trees > 15" dbh and > 16' tall; isolated stands should be > 5 acres with 20-100% canopy closure; smaller stands serving as corridors or in riparian areas are also important.
	Justification:	Limited and declining distribution; dependent species; vulnerable to conversion to conifer plantations, grazing, residential development.

Old-growth/mature forest	Criteria:	Stands of at least 2 tree species; dominants > 200 years old; at least 6 trees/acre > 32" dbh; stand should have 1+ snag/acre > 21" dbh, and 3+ logs/acre 25'+ long and 25"+ diameter at the butt, and 2-5 layers of vegetation in a multi-storied canopy. Stands should be at least 36-40 acres.
	Justification:	Limited and declining distribution; relatively high species diversity, especially for breeding.
Riparian areas	Criteria:	150'-200' on both sides of any Type 1 or 2 stream, 100' on both sides of a Type 3 stream, 50' on both sides of a Type 4 stream, and 25 feet on both sides of parts of Type 5 streams.
	Justification:	High species diversity; high edge component; linkage to other habitats and provides travel corridor for many species; vital to fish species for breeding, rearing, migration.
Sand dunes	Criteria:	Eastern Washington only.
	Justification:	Limited distribution; unique species assemblage; vulnerable to human disturbance (ORV use).
Shrub-steppe	Criteria:	Areas > 10 acres; dominated by native plant species.
	Justification:	Species diversity; unique and dependent species; vulnerable to disturbance; historical habitat loss to agriculture, grazing, and other land uses.
Snag-rich areas	Criteria:	Areas established by survey to contain high snag densities, typically > 1000 snags/100 acres (old burns, wind-damaged areas, created snags in "new forestry" areas, etc.).
	Justification:	Large number of cavity-dependent species.
Talus	Criteria:	Homogenous areas of rock rubble ranging in average size from 0.5' to 6.5', composed of basalt, andesite, and/or sedimentary rocks, including riprap slopes and mine tailings.
	Justification:	Unique species assemblage, including some dependent species; vulnerable to road construction and quarry operations.
Urban Natural Open Space	Criteria:	A **priority species** resides within or is adjacent to the open space or may use it for regular feeding; and/or the open space functions as a **corridor** connecting other priority habitat areas, especially areas that would otherwise be isolated; and/or the open space is an **isolated remnant** of natural habitat larger than 10 acres and surrounded by urban development. Local consideration may be given to open space areas smaller than 10 acres.
	Justification:	Unique species assemblages in urban areas; provides travel corridors and minimizes island effects.
Wetlands	Criteria:	At least one of the following attributes: areas with predominantly hydrophytic plants, at least periodically; substrate is predominantly undrained hydric soils; and/or the substrate is nonsoil and is saturated with water or covered by shallow water at some time during the growing season of each year.
	Justification:	High species diversity; dependent species, especially waterfowl; vulr disturbance; declining wetland areas.